36. (New) The musical instrument of claim 1, wherein the compliant material dampens the string vibrations, thereby shortening ring-down time.

A10 37. (New) The musical instrument of claim 34, wherein at least one electronic signal processing circuit processes the electrical signals for presentation on headphones having a left speaker and a right speaker by imposing a first filtering to electrical signals delivered to the left speaker and imposing a second filtering to electrical signals delivered to the right speaker.

38. (New) The musical instrument of claim 35, wherein graphic or textual material is applied to the device that simulates visually the sound hole.--

REMARKS

Claims 1-30 and 34-38 are pending in this application. In the Office Action mailed December 12, 2002 (the "Office Action"), claims 1-9, 11, 14-17 and 21-27 were rejected under 35 U.S.C. § 102(b) as unpatentable over U.S. Patent No. 4,770,079 ("Mastroianni"). Claims 1-9, 11, 14-17 and 21-27 were rejected under 35 U.S.C. § 102(b) as unpatentable over U.S. Patent No. 3,910,151 ("Copeland"). Claims 28-30 were rejected under 35 U.S.C. § 102(b) as unpatentable over U.S. Patent No. 6,111,186 ("Krozack"). Claims 31-33 were rejected under 35 U.S.C. § 102(b) as unpatentable over U.S. Patent No. 6,191,348 ("Johnson"). Claims 10, 12, 13 and 18-20 were objected to as being dependent upon a rejected base claim, but the Office Action noted that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These rejections and objections are respectfully traversed, for reasons that include those set forth below.

Claims 3, 4, 6-12, 14-16, 18, 19 and 22-24 have been amended for reasons unrelated to patentability over the references relied upon in the Office Action. Claims 31-33 have been cancelled, without prejudice. New claims 34-38 have been added. It is respectfully submitted that all amendments and new claims are supported by the application as filed and that no new matter has been added. For example, support for new claims 34 and 37 may be found on page 15, lines 24-32. Support for new claim 36 may be found on page 10, lines 3-7. Support for new claims 35 and 38 may be found on page 8, line 25 and Figs. 1 and 2.

Claim Rejections and Responsive Arguments

Claims 1-27 and 34-38

Claims 2-19, 23, 24, 27 and 34-38 depend, either directly or indirectly, from independent claim 1. Method claims 21 and 25 are applicable to devices that include the elements of claim 1. Claims 22 and 26 depend from claims 21 and 25, respectively.

Independent claims 1, 21 and 25

Claim 1 recites a musical instrument that includes "an elongated unitary neck and body adapted for stringed play; at least one support arm coupled to the unitary neck and body and extending to at least one side thereof; and at least one side panel coupled to the support arm."

Claim 21 recites "a method of configuring for use a stringed musical instrument comprising at least a unitary neck and body, two side panels, and at least one support arm, comprising the steps of: coupling the support arm to the unitary neck and body; coupling a first side panel to a first end of the support arm; and coupling a second side panel to a second end of the support arm."

Claim 25 recites "a method of configuring for use a stringed musical instrument comprising at least a unitary neck and body, two side panels, and a first and second support arm pivotally coupled to the unitary neck and body, comprising the steps of: moving the first and second support arms from their stowed positions to their deployed positions; coupling a first side panel to a first support arm; and coupling a second side panel to a second support arm."

The Office Action asserted that independent claims 1, 21 and 25 are unpatentable under 35 U.S.C. § 102(b) over Mastroianni and Copeland. These rejections are respectfully traversed. As understood, neither Mastroianni nor Copeland teaches, suggests or indicates a "unitary neck and body" as recited in claims 1, 21 and 25.

One embodiment of the unitary neck and body recited in claims 1, 21 and 25 is included within central unit 5, shown in Figs. 1 and 2 of the present application. Fig. 1 illustrates an assembled guitar and Fig. 2 illustrates a disassembled guitar. As noted in the corresponding portion of the specification, "[t]he central unit comprises neck 35 and heel 37 ***rigidly attached to body portion 40*** . . . ." (Page 8, lines 18 and 19 [emphasis added].) The following section of the invention disclosure, which was incorporated by reference in the present application, makes it clear that the "unitary neck and body" of central unit 5 may be a single unit:

> The central core of the playable prototype may be constructed from wood, fiber-reinforced resin or other suitable materials. Attention is called to one method of construction using wood, which has cost advantages. The neck, body, tuning block, and spacer are cut from a single length of wood of approximately 2 cm in width. The neck and body remain as a single component while the tuning block and spacer severed.

(Id. at p. 4, ¶ 4 [emphasis added].)

The unitary neck and body recited in claims 1, 21 and 25 require a neck and body that are a single unit or that, at the least, remain rigidly attached even when the stringed instrument has been disassembled for travel or storage. Accordingly, guitar strings attached to the unitary neck and body can remain at the same tension whether the stringed instrument of the present invention is assembled or disassembled.

Instead of a unitary neck and body, Mastroianni describes separate neck 12 and body 14 that are connected by coupling assembly 44, which includes screw 108. (See Figs. 5-10.) "The neck 14 is *removably attached* to the body 12 by a coupling assembly 44 provided on the rear face 42 of the coupling portion 26 of the body 12." (Col. 2, lines 61-63 [emphasis added].) Neck 12 and body 14 are intended to be detached for transport:

> As seen in FIG. 6, when the collapsible stringed musical instrument 10 is in its collapsed position, the neck 14 is detached from the body 12 and the supports 16a, 16b, 16c and 16d are pivoted so that they lie within the outline of the body 12. Since the neck 14 and body 12 are approximately the same length, and since the neck 14 is a smaller width than the body, when the collapsible stringed musical instrument is in its collapsed position, the neck is capable of being situated substantially within the outline of the elongated body, and they may be easily packed for travel.

(Col. 3, lines 52-62.)

Similarly, Copeland describes separate body and neck elements that are pivotally coupled:

> A collapsible stringed musical instrument which includes a rigid body section and a collapsible body section having a foldable neck hingedly connected to the rigid body section. A tensioning device is pivotally mounted on the rigid body section and to collapse the musical instrument, the tensioning device is pivoted upwardly, away from the rigid body section to simultaneously release the tension on all of the strings so that the foldable neck may be collapsed.

(Abstract, lines 1-9.)

Fig. 4 of Copeland shows the instrument in its assembled position, with foldable neck 14 aligned with rigid body section 18 and tension in strings 24. Fig. 6 shows foldable neck 14 rotated around hinge connection 16 to an angle with rigid body section 18, wherein strings 24 are slack.

Accordingly, neither Mastroianni nor Copeland teaches a "unitary neck and body" within the meaning of claims 1, 21 and 25. The stringed instruments of Mastroianni and Copeland require string tension to be released when the instrument is collapsed for transport or storage. Folding or taking apart the neck and body of a stringed musical instrument causes the strings to go slack. This requires frequent and inconvenient retuning after the strings are again tensioned. The present invention avoids this limitation by providing a unitary neck and body that is neither folded nor disassembled for storage in its case. The prior art relied upon in the Office Action teaches away from such a unitary neck and body.

In addition, Mastroianni does not teach "at least one side panel coupled to the support arm" as recited in claim 1. (Side panels 10 and 15 and support arm 20, shown in Fig. 2 of the present application, provide examples of these recited elements.) Instead, Mastroianni teaches unitary supports pivotally coupled to the back of the instrument body. The unitary supports are not coupled to at least one side panel.

Therefore, it is respectfully submitted that independent claims 1, 21 and 25 are patentable over both Mastroianni and Copeland. Because claims 2-19, 23, 24 and 27depend (directly or indirectly) from claim 1, claims 2-19, 23, 24, 27 and 34-38 are also patentable over Mastroianni and Copeland. Because claims 22 and 26 depend from claims 21 and 25, respectively, claims 22 and 26 are also patentable over Mastroianni and Copeland. However, several of these claims are patentable over Mastroianni and Copeland for additional reasons, which include the reasons set forth below.

Claim 4

Claim 4 recites a guitar, "wherein a heel is provided at a junction of the unitary neck and body" and "wherein a heel plate corresponding to a like segment of a side of a resonating body of an acoustic guitar of conventional design is affixed to the heel or is received within a slot provided within the heel."

Neither Mastroianni nor Copeland, as understood, show a combination heel and heel plate or a slotted heel to receive a heel plate. Copeland fails to show a heel at all. Mastroianni shows a guitar body of a thickness substantially less that that of the heel. The guitarist playing

an instrument such as Mastroianni teaches would not experience the sensation of the heel of the left hand contacting the top side of the instrument body when playing in high positions. This would seem unnatural and could induce bad playing habits.

Claims 5 and 9

Claim 5 recites the musical instrument of claim 1, "wherein the support arm is releasably coupled to the unitary neck and body and the side panel is releasably coupled to the support arm." Claim 9 recites a support arm releasably coupled to the unitary neck and body; a first side panel releasably coupled to the support arm at a first end of said support arm; and a second side panel releasably coupled to the support arm at a second end of said support arm.

Neither Mastroianni nor Copeland, as understood, show releasable coupling of a support arm to a neck and body (unitary or otherwise) nor of the support arm to side panels. Both Mastroianni and Copeland teach only pivotal coupling. Releasable coupling, as taught in the present invention, enables use of side panels that more closely simulate the body of a full-size stringed instrument. Moreover, these side panels permit arranging the separated components for transport in a more compact manner, as illustrated in Fig. 13. Both of these factors will be of substantial import to the traveling musician. The Mastroianni and Copeland inventions do not permit such an arrangement of disassembled components.

Claims 10, 12, 13 and 18-20

The Office Action acknowledged that these claims contain novel elements and would be allowable if rewritten in independent form. However, for the reasons set forth above, it is respectfully submitted that claim 1 is patentable over the cited references. Therefore, Applicant's attorney respectfully submits that it is unnecessary to rewrite claims 10, 12, 13 and 18-20 in independent form.

Claim 11

Claim 11 recites "the musical instrument according to claim 1 wherein the adaptation for stringed play includes a string tensioning system rigidly coupled to the underside of the unitary neck and body."

Neither Mastroianni nor Copeland, as understood, show a string tensioning system rigidly coupled to the underside of the body.

Claim 16

Claim 16 recites a strip of compliant material disposed between a saddle and a pickup or between the pickup and the bottom of a bridge slot." Neither Mastroianni nor Copeland, as understood, teach such a strip of compliant material. Because there is no acoustic sound box to extract energy from the strings and radiate it into the air, the strings of such an instrument are under damped. This results in an undesirably long sustaining of the note after the string is plucked. The vibration-damping properties of the compliant material serve to overcome this limitation. Moreover, the compliant material provides a coupling of the saddle to the pickup that is more certain and uniform over the length of the saddle.

Claim 17

Claim 17 recites a slotted bridge that includes a string guide proximal to the bridge slot to constrain the strings to spaced apart paths.

Neither Mastroianni nor Copeland shows a string guide. This feature is of particular utility in conjunction with the folded string path, as it establishes the string spacing and holds the strings in place while attaching them to, e.g., the rollers on the tuning machines underneath.

Claim 23

Claim 23 recites a "musical instrument according to claim 1 wherein: a first support arm is pivotally coupled to and disposed on a first side of the unitary neck and body and is releasably coupled to a first side panel; and a second support arm is pivotally coupled to and disposed on a second side of the unitary neck and body and is releasably coupled to a second side panel."

Neither Mastroianni nor Copeland shows a pivotal arm in combination with a releasably coupled side panel.

Claims 28-30

The Office Action rejected claims 28-30 as anticipated by Krozack. These rejections are respectfully traversed.

Krozack teaches to use a separate pickup and signal-processing channel for each string. Krozack cites prior art that employs a single pickup detecting the vibrations of all of the strings, operated in conjunction with a single equalizing channel. Krozack states that his invention relates to "an improved signal processing circuit for the strings to emulate acoustic string musical instruments." Krozack teaches the use of separate equalizers for each string but does not teach a

principal upon which these equalizers are to be constructed and adjusted so as to provide such an emulation.

Generally, equalizers have a multitude of passbands, which are either of equal width or of width proportional to their center frequency. As is well known in the art, equalizers are a special class of filters intended to modify the amplitude of various spectral components within the overall pass- band so as to give a more pleasing presentation. They are not intended for, nor suitable for, emulating complex resonances.

In contrast, the present invention teaches a basis for processing the signals from a pickup so as to emulate the acoustic resonating chamber of a stringed musical instrument, which chamber is not present in the instrument contemplated, having been eliminated, for example, to make the instrument compact and rugged for convenient transportation. This invention teaches the use of electronic processing means to approximate the multi-resonant nature of the large hollow body of a conventional acoustic instrument. To accomplish this, the present invention teaches to use, not equalizers, but a plurality of electronic resonators wherein the characteristics of each resonator (e.g., center frequency, bandwidth, gain, impulse response, and filter order) are selected to provide a desired overall multi-resonant response.

Thus instructed, someone of ordinary skill in the art would be aware to not use equalizers, but, instead, to employ filters in which these parameters could be selected so as to emulate the several resonances of the missing resonating chamber.

Krozack teaches to associate equalizing filters with the properties of each string. The present invention teaches a quite different principle--the use of a system of resonating circuits to substitute for resonances of the absent acoustic resonator. The nature of the principle resonant characteristics (e.g., the center frequency, the quality factor "Q", and the gain of the top-plate and volume resonances) of many acoustic stringed instruments are known in the arts of acoustic instrument physics and construction and can readily be ascertained by the circuit designer who would seek to emulate them electronically.

Krozack does not teach the use of filters in conjunction with an instrument lacking a resonant body. In fact, he does not allude to a resonant body.

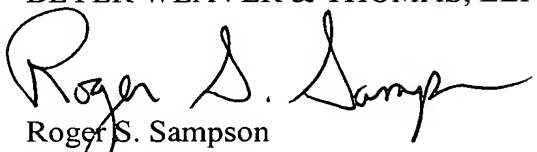
Claims 31-33

Claims 31-33 were rejected as anticipated by Johnson. These claim rejections are moot, because claims 31-33 have been cancelled, without prejudice.

Conclusion

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set forth below.

Respectfully submitted,
BEYER WEAVER & THOMAS, LLP



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ATTACHMENT 1

(Amended Paragraphs of theSpecification)

Paragraph beginning on page 2, line 9:

Prior attempts to provide a compact guitar for travel have taken several forms. Numerous short-necked and small-bodied guitars have been devised. One example of such an instrument is the "Backpacker" guitar manufactured by C. F. Martin and Co. of Nazareth, PA. However, these compromises are not acceptable to most players of conventional acoustic guitars. Such players generally prefer to perform and to practice with an instrument of substantially standard neck length and body size and shape. The size and shape of the guitar is especially critical to the seated player; the body of the guitar rests on their lap and against their chest while their right arm rests on the top of the guitar body. Each player will have a preferred variation of this position. Instruments that are too small or of unconventional shape cannot accommodate these positions. They are difficult to play and promote bad playing posture. Moreover, the small resonant bodies of these instruments paradoxically, produce too little sound for performance purposes and too much sound for "silent" (i.e., ~~quite~~quiet) practice. The latter is of importance when, for example, practicing in hotel rooms at night.

Paragraph beginning page 2 line 23:

Prior-art guitars have also been made wherein the hollow body is entirely eliminated, being replaced by a narrow solid-wood body to which the bridge is attached. Deployable extension arms attached to the instrument body are positioned to contact the player's body at selected points. One example of such an instrument is the "Traveler Guitar" made by a company of the same name in Redlands, CA. This instrument enables "silent" practice using either a stethoscope or electronic detection and amplification for presentation on earphones. However, it ~~is~~ has neither the look nor the feel nor the sound quality of a hollow-bodied acoustic guitar. To approximate the shape of a conventional acoustic guitar, the "Soloette" travel/practice guitar manufactured by Wright Guitar Technology of Eugene, OR, employs three curved metal rods that are plugged into its solid body. These rods form a thin, linear outline of a conventional guitar body. However, a linear outline is not adequate to provide

the guitarist with the "feel" of a real, three-dimensional guitar body. Moreover, this instrument lacks many of the other features of the present invention. The Compact Silent Electric Cello-SVC 200, designed by Yamaha Corp. of America and Japan, employs a solid central core with fixed and retractable elements attached, the latter to provide contact with the player's body.

Paragraph beginning page 5 line 7:

In accordance with another aspect of the present invention, one or more support arms ~~is~~ are pivotally coupled to the central unit and pivotal coupled at its distal end to a side panel. Securing means are provided to lock each pivot at selected rotational positions, whereby they may be secured either in their deployed positions or in their storage positions. In the latter case, the side panels are drawn in against the central unit.

Paragraph beginning page 5 line 19:

In accordance with another aspect of the present invention, electronic circuits are provided by which electrical signals from the pick-up, corresponding to vibrations of the strings, are amplified for presentation through either ~~earphones~~ headphones or an amplifier/loudspeaker system. Additionally these electronic circuits modify the spectral and temporal characteristics of the electrical signals to approximate the resonance effects provided by the resonating hollow body of a conventional instrument.

Paragraph beginning page 5 line 25:

In accordance with another aspect of the present invention, electronic circuits for either tone generation or pitch detection are provided to facilitate tuning the instrument and circuits are provided for the generation of metronome sounds, which are combined electronically with the instrument's signals, allowing the player to hear both at once. Additionally, a line-input jack and circuit are provided to enable the player to hear prerecorded music while practicing and learning.

Paragraph beginning page 6 line 19:

Fig. 3 is a partially cut-away perspective drawing of the proximal portion of the central unit of the guitar of Fig. 1, showing the bridge and saddle, the string-path reverser and the string tensioning system, comprising opposing tuning machines (one of two is shown) mounted on a slotted tuning-machine block that is rigidly attached to the body portion by a spacer. For clarity, only one of six strings is illustrated.

Paragraph beginning page 7 line 8:

Fig.10 is a perspective view of the lower portion of the structures shown in Fig. 9 but with the bottom brace removed and displaced, illustrating the method of coupling. The bottom brace comprises, in part, a cylindrical rod spanning at least the distance between the tips of the side panels. Secured in each end of this rod is a metal post of smaller diameter. These are inserted into mating receivers affixed to the ends of each side panel.

Paragraph beginning page 9 line 25:

Fig. 4 shows in more detail the bridge 75 and the components received in the bridge slot 155. The bridge, which may be made of wood or other suitable material, is affixed to the top of the body near its proximal end, at a position determined by the tuning requirements of the instrument. Saddle 80, which is made of bone or a hard composite material, is received in bridge slot 95. In this embodiment, a piezoelectric under-saddle pick-up 155, such as the Model PU 0860-000 Piezo Guitar Pickup sold by AllParts of Katy Texas, is used. However, alternative sensors of other designs and placement locations may be substituted within the scope of this invention. The electrical lead wire 160 projects down through the bridge and guitar body and is dressed back to the electronics unit 85 (not shown in this figure.) In the illustrated embodiment, a strip of compliant material 165 is inserted between the saddle and the pickup. The compliant material ~~improved~~ improves acoustic coupling between the saddle and the pickup and, to the degree to which it is sound-absorbing, removes a portion of the string's vibrational energy before it is transmitted to the pickup, there by damping the vibration—i.e., shortening the "ring-down" time. This absorption

emulates the loss of energy that is encountered in a conventional hollow-body acoustic guitar, which arises from radiation of sound energy into the surrounding air and from vibrational energy losses in the body material. Alternatively or additionally, compliant material with preferred acoustic properties can be interposed between the pickup and the bottom of the bridge slot.

Paragraph beginning page 15 line 4:

As illustrated in Fig. 18, additional electronic features are provided, which will be seen to be generally useful and to be particularly useful in a portable instrument, especially for practicing. An electronic tuning aid is included. Electronic circuitry for tuning aids is well known; such devices are produced by many manufacturers. Most operate on one of two principles: They either (1) generate tones audible to the player, who then adjusts the tension of each string until it sounds the same as the corresponding reference tone, or (2) employ a frequency-measurement circuit that detects the primary frequency of the plucked string and indicates, usually on a visual display, whether the string is tuned high, low, or on key. One embodiment of the present invention is the combination of a stringed musical instrument and a tuning aid. In another embodiment of the present invention, a stringed musical instrument is combined with an electronic metronome, the sounds of which may be transmitted directly to the player by way of the headphones that present the amplified and filtered signals from the pickup. Electronic circuits for metronomes also are well know. The present invention also provides for the input of electronic signals from other electronic audio sources, e.g., a tape or digital recorder, and for the combining of such sounds with those from the pickup.

Paragraph beginning page 16 line 1:

Fig. 19 illustrates a combined analog and digital implementation of the electronics portion of the present invention. As in the Fig.-18 embodiment, the pickup signals are first pre-amplified. These signals are then digitized by an analog-to-digital converter and the signal processing operations described with reference to Fig. 18 are then carried out in a digital signal processor, using digital filter techniques well

known in the art ([see, for example, Smith, Steven W, "the Scientist and Engineer's Guide to Digital Signal Processing", California Technical Publishing (1997, San Diego, CA.)] The processed signals are converted to analog form by a digital-to-analog converter and amplified in an output stage. The tuner and metronome functions are generated within the digital signal processor.

ATTACHMENT 2

(Indicating Changes to Amended Claims)

1. A musical instrument comprising:

an elongated unitary neck and body adapted for stringed play;

at least one support arm coupled to the unitary neck and body and extending to at least one side thereof; and

at least one side panel coupled to the support arm.

2. The musical instrument according to claim 1 wherein said instrument is a guitar.

3. The guitar according to claim 2 wherein a heel is provided at ~~the~~ a junction of the unitary neck and body.

4. The guitar according to claim 3 wherein a heel plate corresponding to a like segment of ~~the~~ a side of ~~the~~ a resonating body of an acoustic guitar of conventional design is affixed to the heel or is received within a slot provided within the heel.

5. The musical instrument according to claim 1 wherein the support arm is releasably coupled to the unitary neck and body and the side panel is releasably coupled to the support arm.

6. The musical instrument according to claim 1 wherein the support arm extends to ~~both sides~~a first side and a second side of the unitary neck and body and wherein the support arm is coupled at each of its ends to a side panel corresponding to a segment of one of ~~the~~ at least two opposing sides of ~~the~~ a resonating body of an acoustic instrument of conventional design.

7. The musical instrument according to claim 1 wherein the side panel comprises a curved panel corresponding to a segment of ~~the~~ a side of ~~the~~ a resonating body of an acoustic instrument of conventional design, which panel is provided with

an edge corresponding to a contiguous portion of ~~the~~ a top face of the resonating body of said conventionally designed instrument.

8. The musical instrument according to claim 1 wherein the side panel comprises a curved panel corresponding to a segment of ~~the~~ a side of ~~the~~ a resonating body of an acoustic instrument of conventional design, which panel is provided with an edge corresponding to a contiguous portion of ~~the~~ a bottom face of the resonating body of said conventionally designed instrument.

9. A musical instrument according to claim 6, wherein:

the support arm is releasably coupled to the unitary neck and body~~,~~;

a first side panel is releasably coupled to the support arm at a first end of said support arm; and~~,~~

a second side panel is releasably coupled to the support arm at a second end of said support arm.

10. The musical instrument according to claim 9 wherein a bottom brace is releasably coupled between ~~the~~ bottoms of ~~the~~ opposing side panels.

11. The musical instrument according to claim 1 wherein the adaptation for stringed play includes a string tensioning system rigidly coupled to the underside of the unitary neck and body.

12. The musical instrument according to claim 11 wherein the string tensioning system is spaced apart from the unitary neck and body.

13. The musical instrument according to claim 11 wherein the string-path reverser is disposed at the proximal end of the body to guide the strings over the end of the body and to the string tensioning system.

14. The musical instrument according to claim 1 wherein adaptation for stringed play is provided by the addition of:

a fingerboard;

a string tie block for securing ~~the~~ strings near ~~the~~ a distal end of the unitary neck and body;

a nut, disposed proximal to the tie block, for determining the distal end of the active portions of the strings;

a slotted bridge, affixed to ~~the~~ a top of ~~the~~ a proximal end of the unitary neck and body;

a saddle received within ~~the~~ a bridge slot of the slotted bridge; and

an acousto-electric transducer for conversion of string vibrations to electrical waves suitable for electronic amplification and sound reproduction.

15. The musical instrument according to claim 14 wherein the acoustic-to-electric transducer is a piezoelectric pickup received within the bridge slot under the saddle.

16. The musical instrument according to claim 15 further including a strip of flexible material disposed between the saddle and the pickup or between the pickup and the bottom of the bridge slot.

17. The musical instrument according to claim 14 wherein the slotted bridge further includes a string guide proximal to the bridge slot to constrain the strings to spaced apart paths.

18. The musical instrument according to claim 11 wherein the support arm is coupled to the unitary neck and body by a releasable attachment to ~~the~~ a distal end of the string tensioning system.

19. The musical instrument according to claim ~~6~~11 wherein ~~the~~ a coupler by which the support arm is releasably coupled to the side panel comprises:

a block affixed to ~~the~~ an inner surface of the side panel, said block provided with a captive nut accessible at its surface and a thumbscrew partially engaged with said nut; and

~~A~~ a keyhole-shaped aperture in the support arm wherein one end of the keyhole is adapted to received ~~the~~ a head of the thumbscrew and the other to receive ~~the~~ a threaded shank of the thumbscrew.

20. The musical instrument according to claim 13 wherein the string-path reverser comprises a plurality of pulleys or rollers on a common axle and secured within a frame.

21. A method of configuring for use a stringed musical instrument comprising at least a unitary neck and body, two side panels, and at least one support arm, comprising the steps of:

coupling the support arm to the unitary neck and body;

coupling a first side panel to a first end of the support arm; and

coupling a second side panel to a second end of the support arm.

22. A method of configuring for use the musical instrument of claim 21, comprising the steps of claim ~~2-1~~ 21 and the additional steps of coupling a first end of a bottom brace to ~~the~~ a bottom end of ~~a~~ the first side panel and coupling ~~the opposite~~a second end of said bottom brace to ~~the~~ a bottom of ~~a~~ the second side panel.

23. A musical instrument according to claim 1 wherein:

a first support arm is pivotally coupled to and disposed on a first side of the unitary neck and body and is releasably coupled to a first side panel; and~~,~~

a second support arm is pivotally coupled to and disposed on a second side of the unitary neck and body and is releasably coupled to a second side panel.

24. The musical instrument according to claim 23 further including:

rotational stops to establish ~~the~~ a deployed position of each support arm; and

a tensioning bottom-closure device which, when connected between ~~the bottoms~~bottom sections of the first and second side panels, applies a force between the first and second side panels that is reflected to the pivoting support arms, holding the pivoting support arms ~~them~~ against their respective rotational stops.

25. A method of configuring for use a stringed musical instrument comprising at least a unitary neck and body, two side panels, and a first and second support arm pivotally coupled to the unitary neck and body, comprising the steps of:

moving the first and second support arms from their stowed positions to their deployed positions;

coupling a first side panel to a first support arm; and

coupling a second side panel to a second support arm.

26. A method of configuring for use the musical instrument of claim 25, comprising the steps of claim 25 and the additional steps of coupling a first end of a tensioning bottom-closure device to the bottom end of a first side panel and coupling the opposite end of said bottom-closure device to the bottom of a second side panel.

27. A musical instrument according to claim 1 wherein the support arm is pivotally coupled at a first end to the unitary neck and body and pivotally coupled at a second end to a side panel, so as to permit the side panel to be deployed for use or drawn close to the unitary neck and body for storage.

28. A stringed musical instrument lacking a resonant body, which instrument incorporates an acousto-electric transducer and electronic signal processing circuits for amplification of the signals and for alteration of their temporal and spectral characteristics in a manner that approximates the effect of a resonant body.

29. The stringed musical instrument according to claim 28 wherein the electronic signal processing circuits include a plurality of filters the outputs of which are summed.

30. The stringed musical instrument according to claim 29 wherein at least one of the filters is a band-pass filter.

~~31. A stringed musical instrument incorporating an electronic tuning aid.~~

~~32. A stringed musical instrument incorporating metronome.~~

~~33. A musical instrument incorporating an acousto-electric transducer and electronic signal processing circuits and means for accepting an external electrical signal and superposing it with the instrument-generated signal.~~